REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Applicants understand that the amendments to the claims made in the Supplemental Amendment filed on November 25, 2009 were not yet entered. Accordingly, the amendments to the claims in this response include those made in the Supplemental Amendment.

Claim 1 has been amended to limit a number of the activated catalyst to one catalyst. Examples are presented in tables 1-3 on pages 29-31, respectively, of the specification. Accordingly, claim 10 has been canceled, and claims 6 and 8 have been amended editorially. Claim 14 has been added to include only activated platinum catalyst as supported by examples 17-18 and 29 in tables 2-3 on pages 30-31, respectively, of the specification. Claim 11 has been amended to limit the activated catalyst to only palladium carbon catalyst as supported by examples 16 and 21-23 in table 2 on page 30 of the specification. Claim 15, which includes the same formula [1] compound as that in allowable claim 11 and only platinum carbon catalyst as the activated catalyst, has been added as supported by examples 17-18 and 19 in tables 2-3 on pages 30-31, respectively, of the specification. Further, claims 1, 11, and 13 have been amended editorially.

Claims 1-3, 5-10, and 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Dingwen et al. (Japanese Patent Application Publication No. 45-17402) in view of Kato et al. (U.S. Patent No. 4,874,890). Applicants respectfully traverse this rejection.

Claim 1 provides a deuteration method that is useful not only for a compound that is stable under a basic or acidic condition or stable when contacted with D_2O_2, but also a compound that is unstable under such reaction conditions and/or unstable when contacted with D_2O_2 (see page 2, lines 9-16 and page 26, lines 8-13 of the specification), and the claim recites that the reaction condition is neutral and that D_2O_2 is excluded. Dingwen

discloses the deuteration reaction that includes heavy water (D_2O) in the presence of an alkaline metal deuteroxide such as NaOD and deuterium peroxide (D_2O_2) (see coln. 2, para. 3 and tables 1-2 and 3 on pages 3 and 4, respectively, corresponding to second para. from the bottom of page 1 and tables 1-3 on pages 3-5, respectively, of the translation). In the reaction of Dingwen, due to the presence of NaOD and D_2O, the reaction condition of the reference is basic, and D_2O_2 is present in the reaction system (see *id.*). Even if, in general, the optimum range of a parameter disclosed in the prior art could be determined by experimentation by one of ordinary skill and would be obvious unless the range is critical, in the present application, Dingwen discloses the basic reaction condition of deuteration and essential elements that provide the basic condition as discussed above. The reference does not teach or suggest that the deuteration could be carried out in the other conditions such as the neutral condition. It is well known in the art that changing the reaction condition such as from a basic condition to a neutral is a drastic change of the reaction and may affect the reaction rate significantly. Thus, such change would not be comparable to the mere optimization of parameters. From Dingwen's disclosure, there is no reasonable expectation that the deuteration would be successful when the reaction condition is changed from basic to neutral. Also, for the method of claim 1, the neutral condition is critical for deuteration of a compound, which is easily decomposed in the basic condition or is decomposed with D_2O_2 as discussed above (see page 2, lines 9-16 and page 26, lines 8-13 of the specification). Accordingly, claim 1 is distinguished from Dingwen.

Kato discloses a deuteration of methyl acrylate and methyl methacrylate, each of which includes a carbon-carbon double bond, with D_2O or a combination of D_2O and D_2 gas as the deuterium sources in the presence of a catalyst (see coln. 1, lines 62-67 and coln. 2, lines 5-9). Kato does not specifically state that the reaction condition is neutral. One considering using D_2O as the deuterium source in Dingwen according to Kato would recognize that Dingwen has already included D_2O in the reaction system. There is no motivation to remove the other elements such as NaOD and D_2O_2 from the Dingwen's reaction system. It is an unexpected result that the compound is successfully deuterated in the neutral reaction system without NaOD and D_2O_2 as recited in claim 1 of the present application. When the combination of D_2O and D_2 gas is used as a heavy hydrogen

source, hydrogenation of a carbon-carbon double bond moiety in the compound such as methyl acrylate and methyl methacrylate may occur (see page 3, lines 4-10 of the specification), and there is no reasonable basis for one of ordinary skill to use a combination of D_2O and D_2 gas for deuteration of a compound having the carbon-carbon double and/or triple bond knowing the possible hydrogenation of the bond with the combination.

Moreover, the deuteration method of Dingwen is directed to obtain a completely deuterated compound (see last para. on page 1 of the translation). In contrast, Kato discloses that the total deuteration ratio is about 33 % (see coln. 1, lines 55-61) and that the deuteration ratio with an active catalyst is 30 % (see table 1 in coln. 4). Due to such low deuteration ratios of Kato, there also is no reasonable basis for a person with ordinary skill in the art to combine Dingwen with Kato.

Accordingly, claim 1 and claims 2-3, 5-9 and 13-14, which ultimately depend from claim 1, are distinguished from Dingwen in view of Kato, and this rejection should be withdrawn.

Further, like allowable claim 11, claim 15 recites a deuteration method of tricyclo[5.2.1.$0^{2,6}$]decan-8-ol as a substrate compound of formula [1]. Accordingly, claim 15 should be allowable.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

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